ON A WIDELY DISTRIBUTED GAMASID MITE (*LEIOGNATHUS MORSITANS*, SP. N.), PARASITIC ON THE DOMESTIC FOWL.

By Stanley Hirst.

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The species of *Leiognathus* described below apparently has a very wide distribution in Africa and is also found in Mauritius, China, India and South America. It seems indeed to be the common blood-sucking Gamasid mite of poultry in these countries. As it is highly probable that this parasite transmits spirochaetosis, and perhaps other

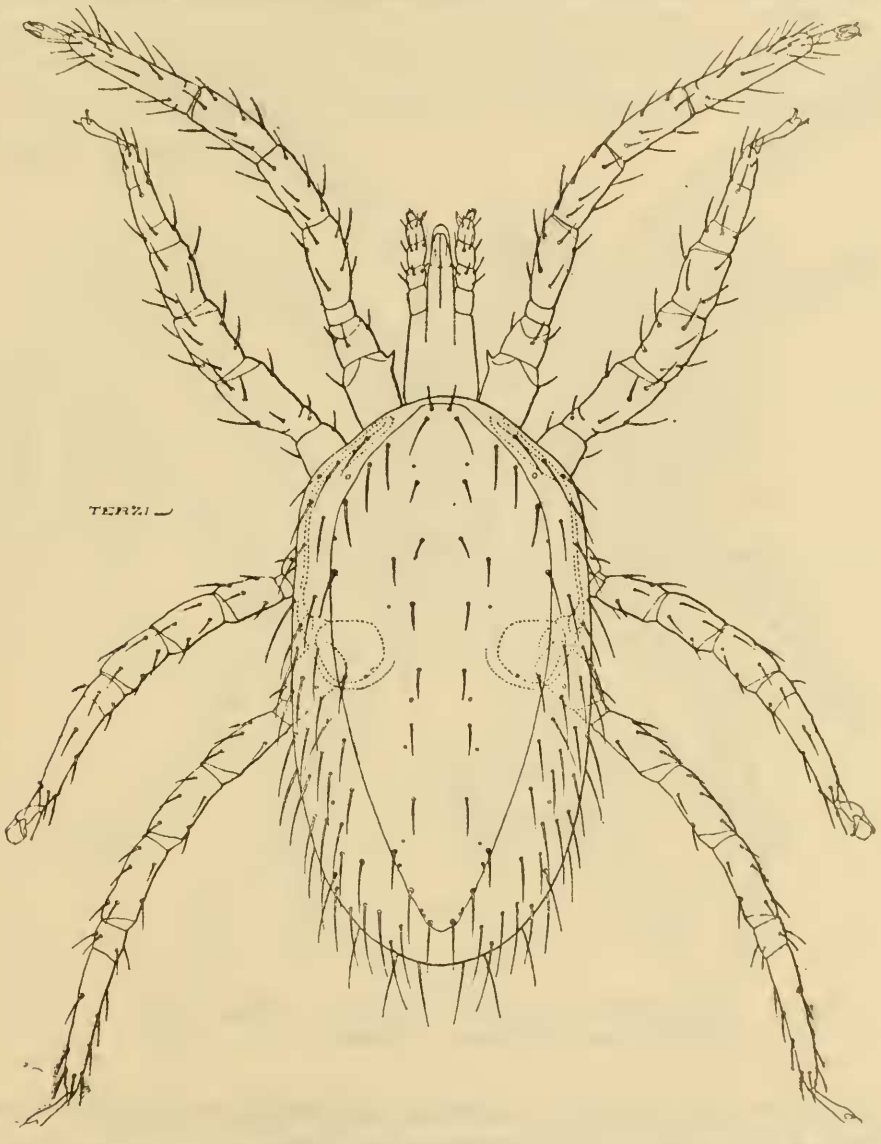

Fig. 1. *Leiognathus morsitans*, Hirst ; dorsal view of female.

diseases of the fowl, it is desirable that further information about its distribution and life-history should be obtained. Two instances of this mite attacking man are recorded below in the list of localities.

Prof. Antonio Berlese has described a species of fowl mite from Buenos Aires under the name *Leiognathus bursa* which may be the same as the one dealt with in this note ; his description is very short, however, and leaves me in much doubt on this point.

Leiognathus morsitans, sp. n.

? *Leiognathus bursa*, Berlese, Bull. Soc. ent. Ital., xx, p. 208, pl. ix, fig. 6 (1888).

♀. *Body* long, oval and narrowed anteriorly. *Dorsal shield* (fig. 1) long and rather narrow, leaving a marginal strip of the soft integument of the body unprotected; it is widest at some distance from the anterior end, but is progressively narrowed posteriorly and pointed at the end. Surface of shield almost smooth, but it is slightly roughened by a faint reticulate sculpturing. Two pairs of hairs are placed close together in the middle of the front end of it, the posterior pair being long. Besides these two anterior pairs, there are seven *inner pairs of hairs* on the shield, all of them being *short* and fine; they practically form a longitudinal series, the

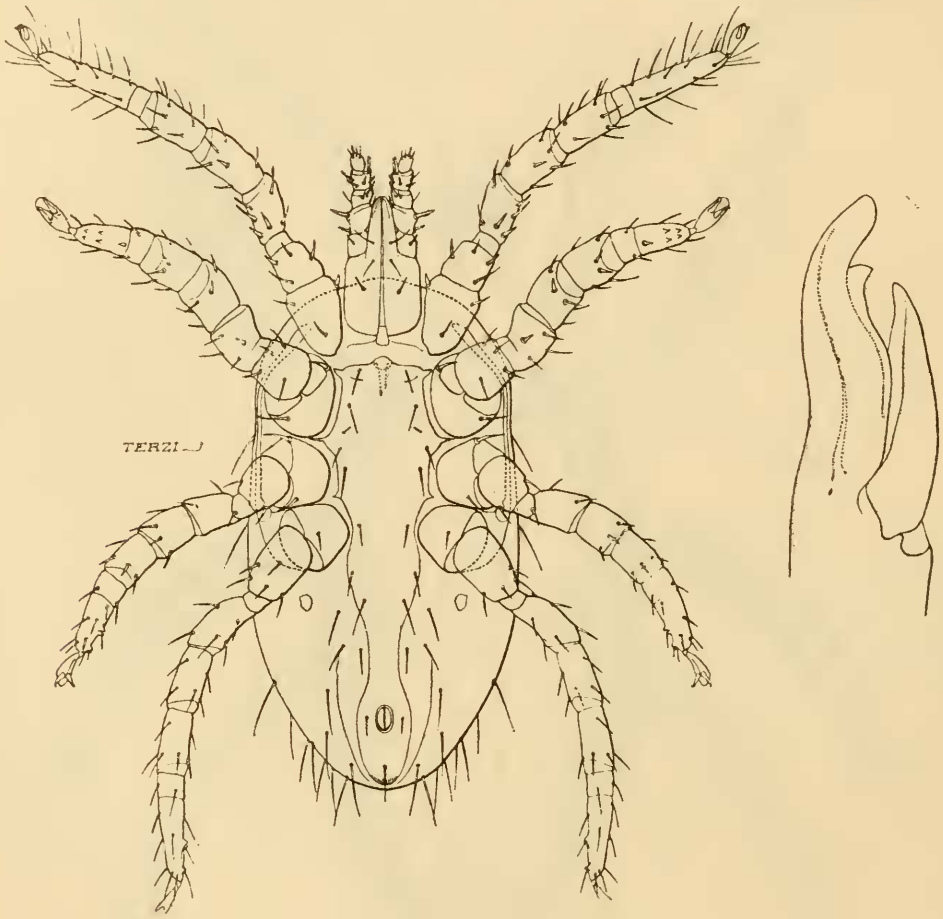

Fig. 2. *Leiognathus morsitans*, Hirst; ventral view and chelicera of male.

hairs of the third pair being placed, however, further apart than the others. Nearly all the *marginal hairs* of the shield are long, especially the anterior ones; two pairs of long hairs are also present at the posterior end and another pair of shorter hairs is situated just in front of them. There are numerous long hairs on the uncovered part of the dorsal surface.

Sternal plate practically trapezoidal in shape and furnished with three pairs of fairly long hairs. *Genito-ventral plate* and *anal plate* normal in appearance. *Peritreme* long, reaching about as far forwards as the middle of the coxa of the first leg. Anterior surface of coxa of second leg furnished with a slender spine, as in *L. bacoti*. There is

also a short but distinct spinule (or spur) at the distal end (on the inner side) of the coxa of the first leg. First leg longer than the fourth ; second and third legs rather short, the former being stout. Fingers of *chelicera* moderately long and unarmed.

Colour (in spirit) usually yellowish, but sometimes red.

Length of body, ·65–·7 mm.

♂. *Dorsal shield* not unlike that of the female, but broader ; the arrangement of the hairs on its surface is practically the same in both sexes. *Peritreme* long. *Ventral plate* provided with seven or eight pairs of hairs and also with the usual unpaired posterior hair. Tarsi of legs 2–4, furnished below with slight distal spurs, which are separated from one another by a distinct interval. Some of the hairs on the lower surface of the legs are short and spiniform (see fig. 2). Second free segment of *palp* with two especially noticeable lateral spines. *Chelicera* as figured (see fig. 2). *Length of body*, ·5 mm.

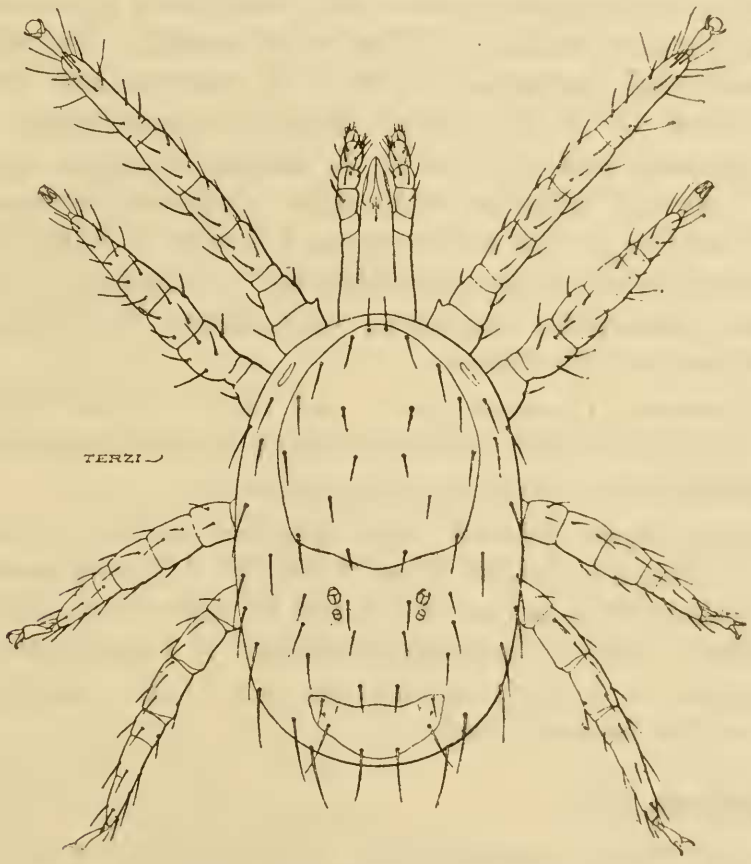

Fig. 3. *Leiognathus morsitans*, Hirst ; dorsal view of protonymph.

Protonymph.—Shape of dorsal shields as shown in figure 3. Hairs on *anterior dorsal shield* twenty in number ; the second pair and those on the lateral margins being long, but the central hairs short. *Posterior dorsal shield* shaped very like that of *L. bacoti*, Hirst, and the three pairs of hairs on it are also very similar, those of the anterior pair being short, but the others long. Two pairs of distinct little platelets are present between the two shields. Hairs on uncovered part of dorsal

surface long. *Peritreme* short, slender and curved. *Sternal plate* reaching backwards as far as the interval between the third and fourth legs (or slightly further) and provided with three pairs of hairs. *Length of body*, ·34 mm.

Localities.—Bathurst, Gambia : on fowls, 25.ii.1911 (Dr. J. J. Simpson). Abinsi, R. Benué, N. Nigeria : on chickens suffering from spirochaetosis, 19.ix.1912 (J. M. Dalziel) ; specimens kindly lent me for examination by the Rev. James Waterston. Yaba, S. Nigeria : a single example from a lizard (Dr. J. W. Scott Macfie). Zanzibar : a number of specimens taken on human beings (Dr. W. M. Aders). Port Herald, Nyasaland : a very large number of specimens found on nesting hens (Dr. J. E. S. Old). Mfongosi, Zululand : a number of specimens from domestic fowls, collected by Mr. W. E. Jones and kindly forwarded to me by Mr. E. C. Chubb, Curator of the Durban Museum. Mayotte, Comoro Islands : specimens from a bird called by the natives " Hibou," collected by G. F. Leigh, 12.v.1911, and presented to the Museum by the Hon. N. Charles Rothschild. Curepipe, Mauritius : very numerous examples from the domestic fowl and common sparrow (*Passer domesticus*), also others from the sparrow of Brazil and Cardinalis, Dec. 1911 (collected by C. Baichoo and presented to the British Museum by the Hon. N. Charles Rothschild). Central Fukien, China : May 1913, in fowl-house (collected by Dr. J. P. Maxwell and kindly lent me for examination by Prof. G. H. F. Nuttall, F.R.S.). Ahmednagar, Deccan, India : 1913, a single specimen found by Dr. H. L. Howell, R.A.M.C., on a lady patient suffering from " very bad irritation of the skin " alleged to be caused by the mite ; " it raised small red lumps with white tops and looked as if the insects burrowed ; irritation was intense even for days after the bite." Bahamas : on fowls, 19.iii.1908 (Mr. J. K. Brace). Mariquita, Columbia : on chickens, May and December, 1914, (Dr. Andrew Balfour and Mr. Pinto).

Much of the material recorded above was received from Mr. Guy Marshall, Director of the Imperial Bureau of Entomology ; my best thanks are due to him for kindly permitting me to examine these specimens.

In an interesting paper, entitled " The English Sparrow as an Agent in the Dissemination of Chicken and Bird Mites,"* Mr. H. E. Ewing records the presence of two parasitic mites (*Dermanyssus avium* and *D. gallinae*) on the English sparrow in the United States. His " *Dermanyssus avium* " is a *Leiognathus*, but probably it is not *L. morsitans*, for Ewing's experiments seem to show that his species cannot establish itself on the domestic fowl.

Dermanyssus gallinae, Redi.

It would be interesting to ascertain the exact distribution of this bird mite in the warmer regions of the world. It is probable that *D. gallinae* and *Leiognathus morsitans* have been confused with one another in reports dealing with parasites of poultry in tropical regions. Unfortunately, all the specimens of *D. gallinae* in the British Museum collection are from European localities, and so I am unable to discuss the further distribution of the species.

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* *The Auk*, xxviii (N. Ser.), pp. 335–340, 2 text-figs., 1911.